



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,181	01/30/2002	Adoram Erell	10559-335001 / P9850X	9388
20985	7590	01/11/2006		
FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER OPSASNICK, MICHAEL N	
			ART UNIT 2655	PAPER NUMBER

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/062,181	ERELL, ADORAM	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael N. Opsasnick	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7-15, 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Heitkamper (EP06000164A1).

As per claim 1,19, Heitkamper (EP06000164A1) teaches a method of controlling volume of a received signal (Page 2, 1<sup>st</sup> col., 2<sup>nd</sup> paragraph, shows volume control to keep the signal above a nominal value and below a second nominal value) comprising:

“computing an automatic gain control (AGC) gain” as an expansion gain from P1 to P2 (page 13, fig. 6; as expansion level from P1 to P2 on the vertical scale represents the gain corresponding to the small amount of increased level of the input level to the microphone, page 5 lines 4-5; the expansion range given by  $g(y_s)=c_2y_s$ );

“computing a weighted dynamic range compression (DRC) gain” as compression between points P2 to P3 in figure 6; and page 5 col. 1 lines 40-44; page 5, col. 2 lines 7-9;

“determining a total automatic volume control (AVC) gain from by combining an additional gain with the AGC gain and the weighted DRC gain” as the total gain from P1 to P3,

Art Unit: 2655

wherein P1 to P2 is equates to AGC gain, and P2 to P3 equates to a DRC gain. (Fig. 6, page 5 col. 1 lines 35-44; col. 2 lines 1-10).

As per claims 2,20, Heitkamper (EP06000164A1) teaches:

“wherein the computation of the AGC and DRC gains are performed on a block of speech samples and updated from one block to the next” as voice level based control signals (page 4, col. 1 lines 30-41, the voice levels are detected, especially during bursts, and the peak signal during these bursts are stored and updated for each burst).

As per claims 3-5,7,21, Heitkamper (EP06000164A1) teaches the weighting factor to be a constant gain, based upon transmission noise levels (page 3, col. 2, lines 30-40; wherein the amplification is performed by the compander; page 4, col. 2 lines 44-52, according to the gain curves as discussed in claim 1).

As per claims 8,9,22, Heitkamper (EP06000164A1) teaches smoothing the gains over several frames (short term and long term averaging → page 5, col. 2 lines 10-35).

As per claim 10, Heitkamper (EP06000164A1) teaches:

“computing the DRC gain using noise signal dependent and receive independent parameters according to the formula:  $\text{drc gain} = \text{MAX DRC GAIN} * \max(\text{drc gain factor, noise factor})$ ; wherein MAX DRC GAIN is an upper limit on the DRC gain.” as equating MAX DRC GAIN to the maximum (cutoff) at level P3 in Fig. 6, and the  $\max(\text{drc gain factor, noise factor})$

Art Unit: 2655

equates to Heitkampers gain equation  $g(y_s)=c_s(y_s)$  on page 5, col. 2, line 8, where  $y_s$  is the digital control value (page 5, col. 1 line 11) and the voice level of  $y$  effects a noise level measurement (through the noise detector, page 6, col. 2, lines 50-55), establishing an absolute bottom (page 3, col. 1 lines 40-50; col. 2 lines 1-5).

As per claim 11, Heitkamper (EP06000164A1) teaches:

“computing the AGC gain using  $\text{agc gain} = (\text{LEVELI} - \text{envelope})$ ; wherein LEVELI is the target level for a receive signal envelope level” as level P2 (Fig. 6) is the upper level of the AGC gain;

“wherein the computation  $\text{agc gain} = \min(\text{MAX AGC GAIN}, \text{agc gain})$ ” as the range between P1 and P2 for the AGC (Fig. 6) and by equation on page 5, col. 2 lines 3-5);

“wherein MAX AGC GAIN the upper limit the gain and  $\text{agc gain} = \min(\text{MAX RMS -long term rms}, \text{agc gain})$ , that the AGC gain is the lesser of the calculated AGC gain and the maximum RMS minus the long term RMS” as the range of P1-P2 in Fig. 6 is a function of the short term average value  $y_s$  compared to the long term value  $y$  (page 5, col. 2 lines 13-151 and lines 21-24). This value is capped at the same value if the calculated value is greater than the nominal value (page 5, col. 2 lines 24-30 → if the calculated value mine  $y_0$  greater than 0, then the value remains at the nominal value.

As per claim 12, Heitkamper (EP06000164A1) teaches a device which receives a signal and performing volume control (Page 2, 1<sup>st</sup> col., 2<sup>nd</sup> paragraph, shows volume control to keep the signal above a nominal value and below a second nominal value) comprising:

Art Unit: 2655

“computing an automatic gain control (AGC) gain” as an expansion gain from P1 to P2 (page 13, fig. 6; as expansion level from P1 to P2 on the vertical scale represents the gain corresponding to the small amount of increased level of the input level to the microphone, page 5 lines 4-5; the expansion range given by  $g(y_s)=c_2y_s$ );

“computing a weighted dynamic range compression (DRC) gain” as compression between points P2 to P3 in figure 6; and page 5 col. 1 lines 40-44; page 5, col. 2 lines 7-9;

“determining a total automatic volume control (AVC) gain from by combining an additional gain with the AGC gain and the weighted DRC gain” as the total gain from P1 to P3, wherein P1 to P2 is equates to AGC gain, and P2 to P3 equates to a DRC gain. (Fig. 6, page 5 col. 1 lines 35-44; col. 2 lines 1-10).

As per claims 13-15,17, Heitkamper (EP06000164A1) teaches the weighting factor to be a constant gain, based upon transmission noise levels (page 3, col. 2, lines 30-40; wherein the amplification is performed by the compander; page 4, col. 2 lines 44-52, according to the gain curves as discussed in claim 1).

As per claim 18, Heitkamper (EP06000164A1) teaches smoothing the gains over several frames (short term and long term averaging → page 5, col. 2 lines 10-35).

As per claim 23, Heitkamper (EP06000164A1) teaches decoding the speech (as receiving decoded speech → page 6, col. 1 last two paragraphs).

***Response to Arguments***

3. Applicant's arguments filed 10/28/2005 have been fully considered but they are not persuasive. As per applicant's arguments against the applied reference, examiner notes that the submitted arguments are toward the specification, and not the broader claim scope. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

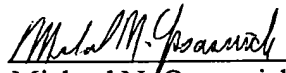
***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Wayne Young, can be reached at (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno  
1/6/06

  
Michael N. Opsasnick  
Examiner  
Art Unit 2655